REMARKS

This communication is a full and timely response to the aforementioned final Office Action dated May 25, 2010. By this communication, claims 1, 2, 6 and 7 are amended. Claims 3-5 and 8-11 are not amended and remain in the application. Thus, claims 1-11 are pending in the application. Claims 1 and 6 are independent.

Reconsideration of the application and withdrawal of the rejections of the claims are respectfully requested in view of the foregoing amendments and the following remarks.

I. Rejections Under 35 U.S.C. § 112

Claims 1-5 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. In particular, the Office objected to the use of the construction "for facing" with regard to the respective faces of the transducer which face the process and which face away from the process.

In response to this rejection, claim 1 has been amended to recite that the transducer has a transducer face facing the process, and a transducer face facing away from the process. For example, with reference to the exemplary embodiments illustrated in Figures 1 and 2, the present disclosure provides that the transducer 14 includes a transducer face 14b facing the process, and a transducer face 14c facing away from the process.

In view of the foregoing amendments to claim 1, Applicants respectfully request that indefiniteness rejections of claims 1-5 be withdrawn.

II. Rejections Under 35 U.S.C. § 102

Claims 1, 2, 6 and 7 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by DE 201 07 112 U1 (hereinafter "ABB"). In addition, claims 1-11 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Bocko et al. (U.S. Patent Publication No. 2002/0145538, hereinafter "Bocko").[1]

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[1] The Bocko publication applied by the Office corresponds to U.S. Patent No. 6,747,572. Although the Office applied the Bocko publication in rejecting the claimed invention, the Office refers to various portions of the Bocko patent in the Office Action. For the sake of consistency, Applicants will hereinafter refer to the Bocko publication, while noting parenthetically the corresponding portions of the Bocko patent to which the Office also cited.

Without acquiescing to these rejections, independent claims 1 and 6 have each been amended to emphasize distinctions between the claimed invention and the applied references.

Applicants respectfully submit that the applied references fail to disclose or suggest all the recited features of the claimed invention, for at least the following reasons.

A. Exemplary Embodiment

With reference to Figure 1, for example, an exemplary embodiment of the present disclosure provides an arrangement which includes a field device 10 that is configured to monitor a technical process of a process installation in which there is at least one pipeline 1 carrying process media in a first direction (arrow 1a, e.g., in the horizontal direction in Figure 1). As shown in Figure 1 and as described in lines 6-7 on page 8 of the specification, the pipeline 1 has an opening 1 formed in its surface. The field device 10 has a housing 11, a sensor 8 which is configured to be inserted through the opening of the pipeline 1 in a second direction substantially perpendicular to the first direction (e.g., in the vertical direction in Figure 1), a wire-free communication interface 5, at least one field device face 11a facing the process, and at least one field device face 11b facing away from the process.

The exemplary arrangement also includes a thermoelectric transducer 14 having a transducer face 14b facing the process and a transducer face 14c facing away from the process. The thermoelectric transducer 14 is arranged in or on the field device 10 outside the pipeline 1 carrying the process media such that the transducer face 14b facing the process is arranged outside the pipeline 1 carrying the process media. The transducer 14 is configured to convert at least one of heat flow in the field device 10 between the field device face 11a facing the process and the field device face 11b facing away from the process, and heat flow through the thermoelectric transducer 14 between the transducer face 14b facing the process and the transducer face 14c facing away from the process, to electrical energy for supplying electrical power to the field device 10.

The foregoing embodiment is encompassed by Applicants' claim 1, which recites an arrangement comprising a field device that is configured to monitor a

technical process of a process installation in which there is at least one pipeline carrying process media in a first direction, where the pipeline has an opening formed in its surface. Claim 1 recites that the field device has a housing, a sensor which is configured to be inserted through the opening of the pipeline in a second direction substantially perpendicular to the first direction, a wire-free communication interface, at least one field device face facing the process, and at least one field device face facing away from the process.

In addition, claim 1 recites that the arrangement comprises a thermoelectric transducer having a transducer face facing the process and a transducer face facing away from the process. Claim 1 recites that the thermoelectric transducer is arranged in or on the field device outside the pipeline carrying the process media such that the transducer face facing the process is arranged outside the pipeline carrying the process media. Claim 1 also recites that the transducer is configured to convert at least one of heat flow in the field device between the field device face facing the process and the field device face facing away from the process, and heat flow through the thermoelectric transducer between the transducer face facing the process and the transducer face facing away from the process, to electrical energy for supplying electrical power to the field device.

None of the documents relied upon by the Examiner disclose such a combination of features.

B. ABB

With reference to Figure 1, ABB discloses a thermoelectric transducer in which a transducer face 142 facing the process media 3 is immersed in the process media 3 carried in the pipeline.

On the other hand, claim 1 recites that the thermoelectric transducer is arranged in or on the field device outside the pipeline carrying the process media such that the transducer face facing the process is arranged outside the pipeline carrying the process media.

Accordingly, ABB discloses an opposite configuration to that of claim 1.

C. Bocko

The Office also alleged that the features of claim 1 are disclosed by Bocko. With reference to Figure 12 (as applied by the Office), Bocko discloses that a thermoelectric module 30 is disposed between a solid base 22 and a radiator 50. With reference to Figure 3, Bocko discloses that the thermoelectric module 30 includes a hot side plate (Thot) (lower side) and a cold side plate (Tcold) (upper side) between which a number of p-type 32 and n-type 34 semiconductor elements are connected in series. Bocko discloses that the hot side (Thot) and cold side (Tcold) of the thermoelectric module 30 are thermally connected in parallel, while the semiconductor elements 32 and 34 are connected in series. Accordingly, to maintain electrical conduction and operation, the hot and cold base plates are required to be continuous above and below the semiconductor elements 32, 34. Referring back to Figure 12, Bocko discloses that the thermoelectric module 30 is arranged on a base 22.

In striving to arrive at the claimed invention, the Office alleged that the base 22 of Bocko could be broadly interpreted as corresponding to a "pipeline" that carries process media. The Office proposed this interpretation in an attempt to correspond the lower surface of the thermoelectric module 30 (i.e., the hot side plate) with the transducer face facing the process, as recited in claim 1. This assertion is not supportable.

As disclosed in paragraph [0056] (Column 6, lines 22-30 of U.S. Patent No. 6,747,572 as referenced by the Office), Bocko discloses that

> the base 22 is mounted to a surface at an elevated temperature, relative to the surrounding air thereby providing a hot side. In usage, it is expected this elevated temperature will be generated as a natural by-product of mechanical, electrical, or chemical processes. For example, internal combustion engines generate a large amount of heat, which is normally wasted through dissipative processes. A surface in contact or near contact with such an engine would be much warmer than the surrounding air.

Accordingly, Bocko defines that the base 22, which is somehow supposed to correspond to a "pipeline" carrying process media, rests on a surface which is expected to dissipate heat during operation. At no point does Bocko disclose, suggest or contemplate that either the base 22 or the hypothetical "pipeline" below the base 22 have an opening through which a sensor is inserted. On the contrary,

the sensor module 60 of Bocko is entirely disassociated from the surface of the process which is being monitored. Furthermore, as noted above, in order to operate the thermoelectric module 30, the hot and cold base plates must be thermally connected in parallel to both the semiconductor elements 32 and 34 which are connected in series. Consequently, the hot and cold base plates cannot be separated to form an opening therebetween to permit a sensor to be inserted through the base 22 and then through the surface of the process on which the base 22 is arranged.

Accordingly, in contrast to claim 1, Bocko does not disclose or suggest an arrangement comprising a thermoelectric transducer which is arranged in or on the field device outside the pipeline carrying the process media such that the transducer face facing the process is arranged outside the pipeline carrying the process media in a first direction, where the pipeline has an opening through which a sensor of the field device is configured to be inserted in a second direction substantially perpendicular to the first direction.

Therefore, similar to ABB, Bocko does not disclose or suggest all the recited features of claim 1.

Accordingly, Applicants respectfully submit that claim 1 is patentable over ABB and Bocko, since ABB and Bocko, either individually or in combination, do not disclose or suggest all the recited features of claim 1.

Claim 6 recites a method for supplying electrical power to a field device, where the method comprises monitoring a technical process in accordance with the above-described features of claim 1 which are not disclosed or suggested by ABB or Bocko.

Therefore, Applicants respectfully submit that claim 6 is patentable for similar reasons to those presented above with respect to claim 1.

III. Rejections Under 35 U.S.C. § 103(a)

Dependent claims 3-5 and 8-11 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over ABB in view of Bocko.

As demonstrated above, ABB and Bocko, either individually or in combination, do not disclose or suggest all the recited features of independent claims 1 and 6.

Consequently, ABB and Bocko cannot disclose or suggest the features of claims 3-5 and 8-11, which depend from claims 1 and 6.

Dependent claims 2-5 and 7-11 recite further distinguishing features over the applied references. The foregoing explanation of the patentability of claims 1 and 6 is sufficiently clear such that it is believed to be unnecessary to separately demonstrate the additional patentable features of the dependent claims at this time. However, Applicants reserve the right to do so should it become appropriate.

IV. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. Accordingly, a favorable examination and consideration of the instant application are respectfully requested.

If, after reviewing this Amendment, the Examiner believes there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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